PATENT

Application # 10/003,636

Attorney Docket # 2001-0163A (1014-150)

AMENDMENTS

**AMENDMENTS TO THE CLAIMS**

1.  - 8 (Canceled)

9.  (Currently Amended) ~~The method according to claim 1,~~ A method for sharing channel bandwidth, comprising:

generating a map interval defining channel transmissions for a period of time;

flexibly partitioning the map interval into a request interval, a management interval, a data+signaling interval, and a voice interval so as to optimize use of the channel bandwidth; and

further including allowing a soft partition among voice and data in which data is allowed to utilize unused bandwidth in voice interval with lower priority.

10. (Canceled)

11. (Currently Amended) ~~The method according to claim 1,~~ A method for sharing channel bandwidth, comprising:

generating a map interval defining channel transmissions for a period of time;

flexibly partitioning the map interval into a request interval, a management interval, a data+signaling interval, and a voice interval so as to optimize use of the channel bandwidth; and

further including placing the request interval, management interval and voice UGs adjacent to each other at one end of the map interval so that a single contiguous interval is available for data+signaling.

12. (Currently Amended) ~~The method according to claim 1,~~ A method for sharing channel

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bandwidth, comprising:

generating a map interval defining channel transmissions for a period of time;

flexibly partitioning the map interval into a request interval, a management interval, a data+signaling interval, and a voice interval so as to optimize use of the channel bandwidth; and

further including placing the request+management interval and voice UGs on opposite ends of the map interval so that a single contiguous interval is available for data+signaling.

13. (Currently Amended) ~~The method according to claim 10,~~ A method for sharing channel bandwidth, comprising:

generating a map interval defining channel transmissions for a period of time;

flexibly partitioning the map interval into a request interval, a management interval, a data+signaling interval, and a voice interval so as to optimize use of the channel bandwidth;

further including placing voice unsolicited grants (UGs) contiguously within the voice interval; and

further including removing a UG from the contiguous UGs.

14. (Currently Amended) ~~The method according to claim 13,~~ A method for sharing channel bandwidth, comprising:

generating a map interval defining channel transmissions for a period of time;

flexibly partitioning the map interval into a request interval, a management interval, a data+signaling interval, and a voice interval so as to optimize use of the channel bandwidth;

further including placing voice unsolicited grants (UGs) contiguously within the voice interval;

further including removing a UG from the contiguous Ugs; and

further including rearranging the UGs so as to close a hole that has

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been created due to the departure of a voice call and its associated UG.

15. (Currently Amended) ~~The method according to claim 14,~~ A method for sharing channel bandwidth, comprising:

generating a map interval defining channel transmissions for a period of time;

flexibly partitioning the map interval into a request interval, a management interval, a data+signaling interval, and a voice interval so as to optimize use of the channel bandwidth;

further including placing voice unsolicited grants (UGs) contiguously within the voice interval;

further including removing a UG from the contiguous Ugs;

~~further including rearranging the UGs so as to close a hole that has been created due to the departure of a voice call and its associated UG;~~ and

further including filling the hole with data packets associated with one or more of request, management, signaling and data packets or the UG from a future voice call.

16. (Currently Amended) ~~The method according to claim 1,~~ A method for sharing channel bandwidth, comprising:

generating a map interval defining channel transmissions for a period of time;

flexibly partitioning the map interval into a request interval, a management interval, a data+signaling interval, and a voice interval so as to optimize use of the channel bandwidth; and

further including placing UGs within the voice interval until a predetermined fraction of total bandwidth available for voice, data, and signaling is reached.

17. (Currently Amended) ~~The method according to claim 1,~~ A method for sharing channel bandwidth, comprising:

generating a map interval defining channel transmissions for a period of time;

flexibly partitioning the map interval into a request interval, a management interval, a data+signaling interval, and a voice interval so as to optimize use of the channel bandwidth; and

further including maximizing contiguousness of the data+signaling interval.

18. (Currently Amended) ~~The method according to claim 1,~~ A method for sharing channel bandwidth, comprising:

generating a map interval defining channel transmissions for a period of time;

flexibly partitioning the map interval into a request interval, a management interval, a data+signaling interval, and a voice interval so as to optimize use of the channel bandwidth; and

further including assigning a higher priority to signaling packets than data packets within the data+signaling interval.

19. (Currently Amended) ~~The method according to claim 18,~~ A method for sharing channel bandwidth, comprising:

generating a map interval defining channel transmissions for a period of time;

flexibly partitioning the map interval into a request interval, a management interval, a data+signaling interval, and a voice interval so as to optimize use of the channel bandwidth;

further including assigning a higher priority to signaling packets than data packets within the data+signaling interval; and

further including assigning unique SIDs to each signaling and data stream.

20. (Currently Amended) ~~The method according to claim 1,~~ A method for sharing channel bandwidth, comprising:

generating a map interval defining channel transmissions for a period of time;

flexibly partitioning the map interval into a request interval, a management interval, a

data+signaling interval, and a voice interval so as to optimize use of the channel bandwidth; and

further including generating a secondary request interval within the map interval if bandwidth is available.


21. - 24. (Canceled)


25. (Currently Amended) ~~The method according to claim 24,~~ A method for sharing upstream channel bandwidth in a DOCSIS system, comprising:

transmitting map intervals from a cable modem termination system on a downstream channel to a plurality of cable modems, wherein the map intervals define upstream traffic for the plurality of cable modems for a period of time in the future; and

flexibly partitioning the map intervals into a plurality of sub intervals based upon bandwidth requirements of the sub intervals;

further including partitioning the map intervals into at least a request interval, a management interval, a data+signaling interval, and a voice interval;

further including placing the management interval and the request interval together to form a contiguous interval;

placing unsolicited grants (UGs) contiguously within the voice interval; and

further including moving UGs to maintain a contiguous UG interval after removal of a respective UG associated with a terminated voice call.


26. (Currently Amended) ~~The method according to claim 24,~~ A method for sharing upstream channel bandwidth in a DOCSIS system, comprising:

transmitting map intervals from a cable modem termination system on a downstream channel to a plurality of cable modems, wherein the map intervals define upstream traffic for the

plurality of cable modems for a period of time in the future; and

flexibly partitioning the map intervals into a plurality of sub intervals based upon bandwidth requirements of the sub intervals;

further including partitioning the map intervals into at least a request interval, a management interval, a data+signaling interval, and a voice interval;

further including placing the management interval and the request interval together to form a contiguous interval;

placing unsolicited grants (UGs) contiguously within the voice interval; and

further including filling a hole in the voice interval due to a terminated voice call with one or more packets associated with management, request, data, and signaling.

27. (Currently Amended) ~~The method according to claim 21,~~ A method for sharing upstream channel bandwidth in a DOCSIS system, comprising:

transmitting map intervals from a cable modem termination system on a downstream channel to a plurality of cable modems, wherein the map intervals define upstream traffic for the plurality of cable modems for a period of time in the future; and

flexibly partitioning the map intervals into a plurality of sub intervals based upon bandwidth requirements of the sub intervals; and

further placing UGs within the voice interval up to a predetermined maximum bandwidth.

28. (Currently Amended) ~~The method according to claim 21,~~ A method for sharing upstream channel bandwidth in a DOCSIS system, comprising:

transmitting map intervals from a cable modem termination system on a downstream

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channel to a plurality of cable modems, wherein the map intervals define upstream traffic for the plurality of cable modems for a period of time in the future; and

flexibly partitioning the map intervals into a plurality of sub intervals based upon bandwidth requirements of the sub intervals; and

further including minimizing fragmentation of the data+signaling interval.


29. (Currently Amended) ~~The method according to claim 21,~~ A method for sharing upstream channel bandwidth in a DOCSIS system, comprising:

transmitting map intervals from a cable modem termination system on a downstream channel to a plurality of cable modems, wherein the map intervals define upstream traffic for the plurality of cable modems for a period of time in the future; and

flexibly partitioning the map intervals into a plurality of sub intervals based upon bandwidth requirements of the sub intervals; and

further including assigning separate SIDs to data and signaling streams.


30. (Currently Amended) ~~The method according to claim 21,~~ A method for sharing upstream channel bandwidth in a DOCSIS system, comprising:

transmitting map intervals from a cable modem termination system on a downstream channel to a plurality of cable modems, wherein the map intervals define upstream traffic for the plurality of cable modems for a period of time in the future; and

flexibly partitioning the map intervals into a plurality of sub intervals based upon bandwidth requirements of the sub intervals; and

further including assigning a higher priority to signaling packets than data packets.


31. (Currently Amended) ~~The method according to claim 21,~~ A method for sharing upstream channel bandwidth in a DOCSIS system, comprising:

transmitting map intervals from a cable modem termination system on a downstream channel to a plurality of cable modems, wherein the map intervals define upstream traffic for the plurality of cable modems for a period of time in the future; and

flexibly partitioning the map intervals into a plurality of sub intervals based upon bandwidth requirements of the sub intervals; and

further including forming a further request interval when bandwidth is available.